REMARKS

Claims 1 through 18 remain in the application.

Claims 1, 7, and 16 were rejected under 35 U.S.C. § 102(e) as being anticipated by Weber et al. (U.S. Patent No. 6,110,216). Applicants respectfully traverse this rejection.

U.S. Patent No. 6,110,216 to Weber et al. discloses an occupant based design method for an automotive vehicle. The method includes the steps of orienting an occupant representation with respect to a common reference point in a computer and representing at least one vehicle system with reference to the common reference point. The method also includes the steps of determining at least one occupant interaction between the occupant representation and the at least one vehicle system and reporting the at least one occupant interaction. Weber et al. does not disclose the steps of determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to a vehicle and electronically generating a parametric design of the instrument panel support structure using the input parameter.

In contradistinction, claim 1 claims the present invention claimed as a method of parametric design of an instrument panel support structure for an instrument panel in a vehicle. The method includes the steps of selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, and locating an instrument support structure relative to the vehicle body. The method also includes the steps of determining an input parameter, wherein the input parameter is a three dimensional coordinate defining the instrument panel support structure relative to the vehicle. The method includes the steps of electronically generating a parametric design of the instrument panel support structure using the input parameter and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical

technique. The method further includes the steps of modifying the input parameter if the parametric design of the instrument panel support structure does not meet the predetermined criteria.

A rejection grounded on anticipation under 35 U.S.C. § 102 is proper only where the subject matter claimed is identically disclosed or described in a reference. In other words, anticipation requires the presence of a single prior art reference which discloses each and every element of the claimed invention arranged as in the claim. In re Arkley, 455 F.2d 586, 172 U.S.P.Q. 524 (C.C.P.A. 1972); Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983); Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 U.S.P.Q. 481 (Fed. Cir. 1984).

Weber et al. '216 does not disclose or anticipate the claimed invention of claim 1. Specifically, Weber et al. '216 merely discloses an occupant based design method for an automotive vehicle including the steps of orienting an occupant representation with respect to a common reference point in a computer, representing at least one vehicle system with reference to the common reference point, determining at least one occupant interaction between the occupant representation and the at least one vehicle system, and reporting the at least one occupant interaction. Weber et al. '216 lacks determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to a vehicle and electronically generating a parametric design of the instrument panel support structure using the input parameter. In Weber et al. '216, the method locates an occupant and instrument panel cluster in the vehicle and electronically represents them, but the method does not determine an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to the vehicle. Weber et al. '216 fails to disclose the combination of a method of parametric design of an instrument panel support

structure including the steps of determining an input parameter, wherein the input parameter is a three dimensional coordinate defining the instrument panel support structure relative to the vehicle, electronically generating a parametric design of the instrument panel support structure using the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique as claimed by Applicants. Therefore, it is respectfully submitted that claim 1 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 102(e).

As to claim 7, claim 7 claims a method of parametric design of an instrument panel support structure for a vehicle including the steps of selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system. The method also includes the steps of orienting an occupant within the vehicle body and locating a steering column relative to the vehicle body. The method includes the steps of determining an input parameter, wherein the input parameter is a three dimensional coordinate defining the instrument panel support structure relative to the vehicle body. The method also includes the steps of electronically generating a parametric design of the instrument panel support structure using the orientation of the occupant, the location of the steering wheel, and the input parameter. The method further includes the steps of comparing the parametric design of the instrument panel support structure to a predetermined criteria using a computer-aided analytical technique, varying an input parameter to meet the predetermined criteria, and regenerating the parametric design of the instrument panel support structure.

Weber et al. '216 does not disclose or anticipate the claimed invention of claim 7. Specifically, Weber et al. '216 merely discloses an occupant based design method for an automotive vehicle including the steps of orienting an occupant representation with respect to a common reference point in a computer, representing at least one vehicle system with reference to

the common reference point, determining at least one occupant interaction between the occupant representation and the at least one vehicle system, and reporting the at least one occupant interaction. Weber et al. '216 lacks determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to a vehicle and electronically generating a parametric design of the instrument panel support structure using the orientation of an occupant, the location of a steering wheel, and the input parameter. In Weber et al. '216, the method locates an occupant and instrument panel cluster in the vehicle and electronically represents them, but the method does not determine an input parameter, wherein the input parameter is a three dimensional coordinate defining the instrument panel support structure relative to the vehicle. Weber et al. '216 fails to disclose the combination of a method of parametric design of an instrument panel support structure including the steps of determining an input parameter, wherein the input parameter is a three dimensional coordinate defining the instrument panel support structure relative to the vehicle, electronically generating a parametric design of the instrument panel support structure using the orientation of the occupant, the location of the steering wheel, and the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique as claimed by Applicants. Therefore, it is respectfully submitted that claim 7 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 102(e).

As to claim 16, claim 16 claims a method of parametric design of an instrument panel support structure for an instrument panel in a vehicle including the steps of selecting a vehicle body style for the vehicle from a vehicle library stored in a memory of a computer system and orienting an occupant within the vehicle body. The method also includes the steps of orienting a steering column within the vehicle body, selecting a parameter for locating an

instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, and selecting a predetermined condition for the instrument panel support structure within the vehicle body. The method includes the steps of electronically generating a parametric design of an instrument panel support structure using the locating parameter, the attaching parameter and the predetermined condition. The method also includes the steps of packaging an instrument panel component within the parametric design of the instrument panel support structure and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique. The method further includes the steps of determining if the parametric design of the instrument panel support structure should be changed if the predetermined criteria is not met, determining if a parameter should be changed if the parametric design of the instrument panel support structure should be changed, and modifying the parameter if the parameter should be changed.

Weber et al. '216 does not disclose or anticipate the claimed invention of claim 16. Specifically, Weber et al. '216 merely discloses an occupant based design method for an automotive vehicle including the steps of orienting an occupant representation with respect to a common reference point in a computer, representing at least one vehicle system with reference to the common reference point, determining at least one occupant interaction between the occupant representation and the at least one vehicle system, and reporting the at least one occupant interaction. Weber et al. '216 lacks selecting a parameter for locating an instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, selecting a predetermined condition for the instrument panel support structure within the vehicle body, and electronically generating a parametric design of an instrument panel support structure using the locating parameter, the attaching parameter and

the predetermined condition. In Weber et al. '216, the method locates an occupant and instrument panel cluster in the vehicle and electronically represents them, but the method does not select a parameter for locating an instrument panel support structure within a vehicle body, select a parameter for attaching the instrument panel support structure within the vehicle body, and select a predetermined condition for the instrument panel support structure within the vehicle body. Weber et al. '216 fails to disclose the combination of a method of parametric design of an instrument panel support structure including the steps of selecting a parameter for locating an instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, selecting a predetermined condition for the instrument panel support structure within the vehicle body, electronically generating a parametric design of an instrument panel support structure using the locating parameter, the attaching parameter and the predetermined condition, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique as claimed by Applicants. Therefore, it is respectfully submitted that claim 16 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 102(e).

Claims 1 through 18 were rejected under 35 U.S.C. § 103 as being unpatentable over Cavendish et al. (U.S. Patent No. 5,119,309) in view of Saxton et al. (U.S. Patent No. 4,882,692). Applicants respectfully traverse this rejection.

U.S. Patent No. 5,119,309 to Cavendish et al. discloses a feature based method of designing automotive panels. The method includes the steps of entering into a computer a plurality of coordinate data points and connecting the data points with straight lines and rounding the corner of the thereby defined polygon with a circle of radius to define a smooth closed curve. The method also includes the steps of generating output data which defines the composite surface and machining the workpiece in accordance with the output data. Cavendish et al. does not

disclose determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to a vehicle, electronically generating a parametric design of an instrument panel support structure using the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique.

U.S. Patent No. 4,882,692 to Saxton et al. discloses methods and systems for generating parametric designs. A method includes the steps of employing a data entry device to establish a master drawing with text and dimensions represented by variables and continuously displaying the updated master drawing on a monitor as the master drawing is established. The method also includes the steps of displaying on the monitor a design plan with an array of cells and employing the data entry device to input to the design plan each of one or more of the cells a statement which includes a solicitation for information. The method also includes the steps of employing the data entry device to input to the computer an instruction and employing the data entry device to input to the computer information solicited. The method includes the steps of displaying the information inputted by the user on the monitor so that the user can check the responses inputted to the computer and electronically storing in the computer data representing the accomplished design. Saxton et al. does not disclose selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, locating an instrument support structure relative to the vehicle body, determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to the vehicle, and electronically generating a parametric design of an instrument panel support structure using the input parameter.

The United States Court of Appeals for the Federal Circuit (CAFC) has stated in determining the propriety of a rejection under 35 U.S.C. § 103, it is well settled that the

obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that "[a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976). See also In re Lalu, 747 F.2d 703, 705, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.")

None of the references cited, either alone or in combination with each other, teach or suggest the claimed invention of claim 1. Specifically, Cavendish et al. '309 merely discloses a feature based method of designing automobile panels including the steps of entering into a computer a plurality of coordinate data points, connecting the data points with straight lines and rounding the corner of the thereby defined polygon with a circle of radius to define a smooth closed curve, generating output data which defines the composite surface, and machining the workpiece in accordance with the output data. Cavendish et al. '309 lacks determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to a vehicle, electronically generating a parametric design of an instrument panel support structure using the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-

aided analytical technique. In Cavendish et al. '309, there is no parametric design. Saxton et al. '692 merely discloses methods and systems for generating parametric designs including the steps of establishing a master drawing with text and dimensions, continuously displaying the updated master drawing on a monitor, displaying on the monitor a design plan with an array of cells, inputting to the design plan a statement which includes a solicitation for information, inputting to the computer an instruction and information solicited, displaying the information inputted on the monitor so that the user can check the responses inputted to the computer, and electronically storing in the computer data representing the accomplished design. Saxton et al. '692 lacks selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, locating an instrument support structure relative to the vehicle body, determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to the vehicle, and electronically generating a parametric design of an instrument panel support structure using the input parameter. In Saxton et al. '692, while a parametric design can be electronically generated, the parametric design is not of an instrument panel support structure using an input parameter of a three dimensional coordinate defining an instrument panel support structure relative to the vehicle. As such, there is no motivation in the art to combine Cavendish et al. '309 and Saxton et al. '692 together.

The references, if combinable, fail to teach or suggest the combination of a method of parametric design of an instrument panel support structure including the steps of selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, locating an instrument support structure relative to the vehicle body, determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to the

vehicle, electronically generating a parametric design of the instrument panel support structure using the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique as claimed by Applicants. The claimed invention is novel and unobvious because the method of parametric design of an instrument panel support structure utilizes parametric automated design in light of predetermined criteria. Thus, the Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 1 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

As to claim 7, claim 7 claims a method of parametric design of an instrument panel support structure for a vehicle including the steps of selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system. The method also includes the steps of orienting an occupant within the vehicle body and locating a steering column relative to the vehicle body. The method includes the steps of determining an input parameter, wherein the input parameter is a three dimensional coordinate defining the instrument panel support structure relative to the vehicle body. The method also includes the steps of electronically generating a parametric design of the instrument panel support structure using the orientation of the occupant, the location of the steering wheel, and the input parameter. The method further includes the steps of comparing the parametric design of the instrument panel support structure to a predetermined criteria using a computer-aided analytical technique, varying an input parameter to meet the predetermined criteria, and regenerating the parametric design of the instrument panel support structure.

None of the references cited, either alone or in combination with each other, teach or suggest the claimed invention of claim 7. Specifically, Cavendish et al. '309 merely discloses a feature based method of designing automobile panels including the steps of entering into a

computer a plurality of coordinate data points, connecting the data points with straight lines and rounding the corner of the thereby defined polygon with a circle of radius to define a smooth closed curve, generating output data which defines the composite surface, and machining the workpiece in accordance with the output data. Cavendish et al. '309 lacks determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to a vehicle, electronically generating a parametric design of an instrument panel support structure using the orientation of an occupant, the location of a steering wheel, and the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique. In Cavendish et al. '309, there is no parametric design. Saxton et al. '692 merely discloses methods and systems for generating parametric designs including the steps of establishing a master drawing with text and dimensions, continuously displaying the updated master drawing on a monitor, displaying on the monitor a design plan with an array of cells, inputting to the design plan a statement which includes a solicitation for information, inputting to the computer an instruction and information solicited, displaying the information inputted on the monitor so that the user can check the responses inputted to the computer, and electronically storing in the computer data representing the accomplished design. Saxton et al. '692 lacks selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, locating an instrument support structure relative to the vehicle body, determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to the vehicle, and electronically generating a parametric design of an instrument panel support structure using the orientation of an occupant, the location of a steering wheel, and the input parameter. In Saxton et al. '692, while a parametric design can be electronically generated, the parametric design is not of

an instrument panel support structure using the orientation of an occupant, the location of a steering wheel, and an input parameter of a three dimensional coordinate defining an instrument panel support structure relative to the vehicle. As such, there is no motivation in the art to combine Cavendish et al. '309 and Saxton et al. '692 together.

Applicants are not attacking the references individually, but are clearly pointing out that each reference is deficient and, if combined (although Applicants maintain that they are not combinable), the combination is deficient. The present invention sets forth a unique and non-obvious combination of a method of parametric design of an instrument panel support structure that utilizes parametric automated design in light of predetermined criteria. The references, if combinable, fail to teach or suggest the combination of a method of parametric design of an instrument panel support structure including the steps of selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, locating an instrument support structure relative to the vehicle body, determining an input parameter, wherein the input parameter is a three dimensional coordinate defining an instrument panel support structure relative to the vehicle, electronically generating a parametric design of the instrument panel support structure using the orientation of the occupant, the location of the steering wheel, and the input parameter, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique as claimed by Applicants.

Further, the CAFC has held that "[t]he mere fact that prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification". In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). The Examiner has failed to show how the prior art suggested the desirability of modification to achieve Applicants' invention. Thus, the Examiner has failed to establish a case

of prima facie obviousness. Therefore, it is respectfully submitted that claim 7 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

As to claim 16, claim 16 claims a method of parametric design of an instrument panel support structure for an instrument panel in a vehicle including the steps of selecting a vehicle body style for the vehicle from a vehicle library stored in a memory of a computer system and orienting an occupant within the vehicle body. The method also includes the steps of orienting a steering column within the vehicle body, selecting a parameter for locating an instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, and selecting a predetermined condition for the instrument panel support structure within the vehicle body. The method includes the steps of electronically generating a parametric design of an instrument panel support structure using the locating parameter, the attaching parameter and the predetermined condition. The method also includes the steps of packaging an instrument panel component within the parametric design of the instrument panel support structure and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique. The method further includes the steps of determining if the parametric design of the instrument panel support structure should be changed if the predetermined criteria is not met, determining if a parameter should be changed if the parametric design of the instrument panel support structure should be changed, and modifying the parameter if the parameter should be changed.

None of the references cited, either alone or in combination with each other, teach or suggest the claimed invention of claim 16. Specifically, Cavendish et al. '309 merely discloses a feature based method of designing automobile panels including the steps of entering into a computer a plurality of coordinate data points, connecting the data points with straight lines and

rounding the corner of the thereby defined polygon with a circle of radius to define a smooth closed curve, generating output data which defines the composite surface, and machining the workpiece in accordance with the output data. Cavendish et al. '309 lacks selecting a parameter for locating an instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, selecting a predetermined condition for the instrument panel support structure within the vehicle body, electronically generating a parametric design of an instrument panel support structure using the locating parameter, the attaching parameter and the predetermined condition, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique. In Cavendish et al. '309, there is no parametric design. Saxton et al. '692 merely discloses methods and systems for generating parametric designs including the steps of establishing a master drawing with text and dimensions, continuously displaying the updated master drawing on a monitor, displaying on the monitor a design plan with an array of cells, inputting to the design plan a statement which includes a solicitation for information, inputting to the computer an instruction and information solicited, displaying the information inputted on the monitor so that the user can check the responses inputted to the computer, and electronically storing in the computer data representing the accomplished design. Saxton et al. '692 lacks selecting a parameter for locating an instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, selecting a predetermined condition for the instrument panel support structure within the vehicle body, and electronically generating a parametric design of an instrument panel support structure using the locating parameter, the attaching parameter and the predetermined condition. In Saxton et al. '692, while a parametric design can be electronically generated, the parametric design is not of an instrument panel

support structure using a locating parameter, an attaching parameter and a predetermined condition. As such, there is no motivation in the art to combine Cavendish et al. '309 and Saxton et al. '692 together.

The references, if combinable, fail to teach or suggest the combination of a method of parametric design of an instrument panel support structure including the steps of selecting a vehicle body structure for the vehicle from a library stored in a memory of a computer system, orienting an occupant within the vehicle body, locating an instrument support structure relative to the vehicle body, selecting a parameter for locating an instrument panel support structure within the vehicle body, selecting a parameter for attaching the instrument panel support structure within the vehicle body, selecting a predetermined condition for the instrument panel support structure within the vehicle body, electronically generating a parametric design of the instrument panel support structure using the locating parameter, the attaching parameter and the predetermined condition, and determining if the parametric design of the instrument panel support structure meets a predetermined criteria using a computer-aided analytical technique as claimed by Applicants. The claimed invention is novel and unobvious because the method of parametric design of an instrument panel support structure utilizes parametric automated design in light of predetermined criteria. Thus, the Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 16 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

Obviousness under § 103 is a legal conclusion based on factual evidence (In re Fine, 837 F.2d 1071, 1073, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988), and the subjective opinion of the Examiner as to what is or is not obvious, without evidence in support thereof, does not suffice. Since the Examiner has not provided a sufficient factual basis, which is supportive of his/her position (see In re Warner, 379 F.2d 1011, 1017, 154 U.S.P.Q. 173, 178 (C.C.P.A. 1967),

cert. denied, 389 U.S. 1057 (1968)), the rejection of claims 1 through 18 is improper. Therefore, it is respectfully submitted that claims 1 through 18 are allowable over the rejection under 35 U.S.C. § 103.

Based on the above, it is respectfully submitted that the claims are in a condition for allowance or in better form for appeal. Applicants respectfully request reconsideration of the claims and withdrawal of the final rejection. It is respectfully requested that this Amendment be entered under 37 C.F.R. 1.116.

Respectfully submitted,

By: _____

Daniel H. Bliss
Reg. No. 32,398

BLISS McGLYNN, P.C.
2075 West Big Beaver Road, Suite 600
Troy, Michigan 48084
(248) 649-6090

Date: August 7, 2003

Attorney Docket No.: 0693.00185
Ford Disclosure No.: 198-0046